Please AMEND claim 15 as follows.

1.   (Previously Presented) A system for recognizing a shape of a staircase or other polyhedron based on an image input from photographic means, comprising:

at least one camera as the photographic means;

region selection means for selecting a predetermined region to be processed further for detailed analysis within the image photographed by the at least one camera;

processing region setting means for obtaining a range image from the image obtained by the at least one camera and for setting a processing region upon the obtained range image based on the selected region; and

polyhedron shape recognition means for recognizing the shape of one or more polyhedrons based on the range image within a set candidate range.

2.   (Previously Presented) A system according to claim 1, wherein the photographic means comprises at least two cameras, the region selection means is configured to select the predetermined region within the image photographed by one of the at least two cameras, and the processing region setting means is configured to obtain the range image from the image obtained stereoscopically from the at least two cameras.

3.   (Previously Presented) A system according to claim 1, wherein the region selection means is configured to extract groups of line segments that are longer than a predetermined length from within the photographed image, and to select the predetermined region based on positions of the extracted groups of line segments.

4.   (Previously Presented) A system according to claim 3, wherein the region selection means is configured to select the predetermined region based on the positions of groups of line segments that are parallel to each other within the extracted groups of line segments, wherein the groups of line segments are sufficiently close in distance.

5.   (Previously Presented) A system according to claim 1, wherein the polyhedron shape recognition means is configured to extract sets of points constituting the range image within the processing region as sets of range data in a three-dimensional space and to recognize the shape of said polyhedron based on the extracted sets of points.

6.   (Previously Presented) A system according to claim 5, wherein the polyhedron is a staircase and the polyhedron shape recognition means are configured to assume the extracted set of points to be an inclined plane, and to recognize the shape of said staircase by finding an approximate plane.

7.	(Previously Presented)	A system according to claim 5, wherein the polyhedron is a staircase and the polyhedron shape recognition means is configured to section the extracted set of points along vertical planes, and to recognize the shape of the staircase based on an error between sets of points on cross-sectional planes and a two-dimensional model.

8.	(Previously Presented)	A method of recognizing a shape of a staircase or other polyhedron based on an image input from at least one camera, comprising:

selecting a predetermined region within the image photographed by the at least one camera;

obtaining a range image from the image obtained by the at least one camera and setting a processing region upon the obtained range image based on the selected region, and

recognizing the shape of one or more polyhedrons based on the range image within a set candidate range.

9.	(Previously Presented)	A method according to claim 8, wherein the selecting further comprises selecting the predetermined region within the image photographed by one of at least two cameras, and the obtaining further comprises obtaining the range image from the image obtained stereoscopically from the at least two cameras.

10. (Previously Presented) A method according to claim 8, wherein the extracting further comprises extracting groups of line segments that are longer than a predetermined length from within the photographed image, and the selecting further comprises selecting the predetermined region based on positions of the extracted groups of line segments.

11. (Previously Presented) A method according to claim 10, wherein the selecting further comprises selecting the predetermined region based on the positions of groups of line segments that are parallel to each other within the extracted groups of line segments, wherein the groups of line segments are sufficiently close in distance.

12. (Previously Presented) A method according to claim 8, wherein the extracting further comprises extracting sets of points constituting the range image within the processing region as sets of range data in a three-dimensional space and the recognizing further comprises recognizing the shape of said polyhedron based on the extracted sets of points.

13. (Previously Presented) A method according to claim 12, wherein the polyhedron is a staircase and the extracted set of points is assumed to be an inclined plane, and the recognizing further comprises recognizing the shape of said staircase by finding an approximate plane.

14.   (Previously Presented) A method according to claim 12, wherein the polyhedron is a staircase and the extracted set of points is sectioned along vertical planes, and the recognizing further comprises recognizing the shape of the staircase based on an error between sets of points on cross-sectional planes and a two-dimensional model.

15.   (Currently Amended) A computer program embodied on a computer-readable storage medium for recognizing shape of a staircase or other polyhedron based on an image input from at least one camera, the program configured to control a processor to perform a process, the process comprising:

selecting a predetermined region within the image photographed by the at least one camera;

obtaining a range image from the image obtained by the at least one camera and setting a processing region upon the obtained range image based on the selected region; and

recognizing the shape of one or more polyhedrons based on the range image within a set candidate range.